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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/470,236	11/15/1999	ANDREW D. BAILEY III	LAM1P123/P05	5922
22434	7590	09/24/2003		

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[REDACTED] EXAMINER

ALEJANDRO MULERO, LUZ L

ART UNIT	PAPER NUMBER
1763	29

DATE MAILED: 09/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	09/470,236	BAILEY ET AL.
	Examiner Luz L. Alejandro	Art Unit 1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 10 March 2003 and 07 July 2003.
- 2a) This action is FINAL.      2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-11 and 13-54 is/are pending in the application.
- 4a) Of the above claim(s) 40 is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-11, 13-39 and 41-54 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

- 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a)  The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Election/Restrictions***

Applicant's election with traverse of species A in Paper No. 28 is acknowledged.

The traversal is on the ground(s) that several searches have been conducted since this is a continuing application. This is not found persuasive because the species has been brought to the examiner's attention by the newly added claims and is based upon the newly added claims.

The requirement is still deemed proper and is therefore made FINAL.

Claim 40 is withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 28.

### ***Claim Objections***

Claim 20 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 20 contains a limitation already present in claim 19 and therefore fails to further limit the independent claim.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or  
(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

Claims 1-5, 7-11, 13-18, and 38-39 are rejected under 35 U.S.C. 102(e) as being anticipated by Li et al., U.S. Patent 6,070,551.

Li et al. shows the invention as claimed including a plasma processing system, said plasma processing system comprising: a substantially cylindrical plasma processing chamber 6 used to process a substrate 42, said substantially cylindrical plasma processing chamber including a top region 76 located on the top surface of said substantially cylindrical plasma processing chamber, an upper peripheral region (the region around gas nozzle 34a), and a lower peripheral region (the region around gas nozzle 34) located on a surface surrounding the periphery of said substantially cylindrical plasma processing chamber; a gas flow system operated by a processor (see col. 4-lines 59-65) and coupled to said plasma processing chamber, said gas flow system using controllers (37a,37,60) to control the flow of input gas into at least two

different regions of said plasma processing chamber; wherein said at least two different regions include a lower peripheral region and a top region of the chamber and the peripheral region is not part of the top region (see Fig. 3 and col. 4-line 33 to col. 5-line 63).

Furthermore, concerning the input gas being a mixture of gases or source gas suitable for use to etch said substrate in said plasma processing chamber, since an apparatus is being claimed as the instant invention, the method teachings are not considered to be the matter at hand, since a variety of methods can be done with the apparatus. Furthermore, the particular use for the source gas is viewed as an intended use that does not further limit, and therefore does not patentably distinguish the claimed invention. The apparatus of Li et al. is capable of using a source gas that is suitable for etching the substrate in the plasma processing chamber.

With respect to claims 10-11, note that Li et al. suggests the replacement of the gas injectors of Fig. 1 with gas rings (see col. 8-lines 7-22).

Claims 19-20, 23-25, 28-30, 32-34, 42-44 and 53-54 are rejected under 35 USC 102(b) as being anticipated by Collins et al., U.S. Patent 6,024,826.

Collins et al. shows the invention as claimed including a plasma processing chamber (see fig. 21) within which a plasma is both ignited and sustained for said processing, said plasma processing chamber having no separate plasma generation chamber, said plasma processing chamber having an upper end and a lower end; and a gas flow system (164a-d, 300) coupled to said plasma processing chamber, said gas

flow system controlling the flow of input gas into at least two different regions of said plasma processing chamber, said at least two different regions including at least one peripheral region located at a side surface of said plasma processing chamber and at least one top region located at a top surface of said plasma processing chamber, said peripheral region 164b being located closer to said upper end of said plasma processing chamber than said lower end of said plasma processing chamber (see fig. 21 and its description).

Furthermore, concerning the input gas being a mixture of gases or source gas suitable for use to etch said substrate in said plasma processing chamber, since an apparatus is being claimed as the instant invention, the method teachings are not considered to be the matter at hand, since a variety of methods can be done with the apparatus. Furthermore, the particular use for the source gas is viewed as an intended use that does not further limit, and therefore does not patentably distinguish the claimed invention. The apparatus of Collins et al. is capable of using a source gas that is suitable for etching the substrate in the plasma processing chamber.

Claims 19-35, 37, 42-44, 46, 48, and 53-54 are rejected under 35 USC 102(e) as being anticipated by Murugesh et al., U.S. Patent 6,228,781 B1.

Murugesh et al. shows the invention as claimed including a plasma processing system 10 for processing a substrate, comprising: a plasma processing chamber within which a plasma is both ignited and sustained for said processing, said plasma processing chamber having no separate plasma generation chamber, said plasma

processing chamber having an upper end and a lower end; and a gas flow system coupled to said plasma processing chamber, said gas flow system controlling the flow of input gas into a top central region, an upper peripheral region including gas rings 37, and a lower peripheral region of the chamber, said upper peripheral region being closer to the upper end of the plasma processing chamber than the lower portion of the plasma processing chamber (see fig. 1A and col. 4-line 43 to col. 7-line 35).

Regarding claim 37, note that Murugesh et al. also includes a coupling window 14 disposed at an upper end of said plasma processing chamber and an RF antenna arrangement 29 disposed above a plate defined by said substrate when said substrate is disposed within said plasma processing chamber for processing (see fig. 1A).

Furthermore, concerning the input gas being a mixture of gases or source gas suitable for use to etch said substrate in said plasma processing chamber, since an apparatus is being claimed as the instant invention, the method teachings are not considered to be the matter at hand, since a variety of methods can be done with the apparatus. Furthermore, the particular use for the source gas is viewed as an intended use that does not further limit, and therefore does not patentably distinguish the claimed invention. The apparatus of Murugesh et al. is capable of using a source gas that is suitable for etching the substrate in the plasma processing chamber.

Claims 50-52 are rejected under 35 USC 102(b) as being anticipated by Li et al., U.S. Patent 6,009,830.

Li et al. shows the invention as claimed including a gas flow system for distributing gases within a plasma process chamber 8 suitable for processing a substrate, the gas flow system comprising: a gas source (64,66) capable of supplying an input gas; a plurality of outputs (38,40) for releasing an output gas formed by a mixture of gases into said plasma process chamber, a first output 38 being configured to release said output gas into an inner region of said plasma process chamber; a second output 40 being configured to release said output gas into an outer region of said process chamber, said inner region corresponding to a center of said substrate and said outer region corresponding to an outer portion of the substrate; and a gas flow controller (76,68,72,70,74,56,60,62,52) disposed between said gas source (64,66) and said plurality of outputs (38,40), said gas flow controller being configured to control the delivery of said output gas into said plasma process chamber, said gas flow controller having an inlet arranged to receive said input gas from said gas source, and a plurality of outlets arranged to deliver said output gas to different locations within said plasma process chamber, a first outlet being configured to deliver said output gas to said first output, a second outlet being configured to deliver said output gas to said second output, said gas flow controller adjusting the amount of said output gas that is delivered to said first and second outputs so as to provide better process control (see fig. 2 and col. 3-line 4 to col. 4-line 24).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Li et al., U.S. Patent 6,070,551 in view of Wing et al., U.S. Patent 6,277,235.

Li et al. is applied as above but fails to expressly disclose where the process gas that is flowed through the lower region of the chamber is flown through a chuck supporting a wafer. Wing et al. discloses flowing input gas through a chuck supporting a wafer (see fig. 1 and col. 3-line 19 to col. 4-line 22). In view of this disclosure, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Li et al. so as to flow input gas through the chuck as

disclosed by Wing et al. because Wing et al. shows this as a suitable method to flow gas into a processing chamber.

Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Li et al., U.S. Patent 6,070,551 in view of Li et al., U.S. Patent 6,009,830.

Li et al. '551 is applied as above but fails to expressly disclose the controller structure as claimed. Li et al. '830 shows a gas flow system for distributing gases within a plasma process chamber 8 suitable for processing a substrate, the gas flow system comprising: a gas source (64,66) capable of supplying an input gas; a plurality of outputs (38,40) for releasing an output gas formed by a mixture of gases into said plasma process chamber, a first output 38 being configured to release said output gas into an inner region of said plasma process chamber; a second output 40 being configured to release said output gas into an outer region of said process chamber, said inner region corresponding to a center of said substrate and said outer region corresponding to an outer portion of the substrate; and a gas flow controller (76,68,72,70,74,56,60,62,52) disposed between said gas source (64,66) and said plurality of outputs (38,40), said gas flow controller being configured to control the delivery of said output gas into said plasma process chamber, said gas flow controller having an inlet arranged to receive said input gas from said gas source, and a plurality of outlets arranged to deliver said output gas to different locations within said plasma process chamber, a first outlet being configured to deliver said output gas to said first output, a second outlet being configured to deliver said output gas to said second output,

said gas flow controller adjusting the amount of said output gas that is delivered to said first and second outputs so as to provide better process control (see fig. 2 and col. 3-line 4 to col. 4-line 24). In view of this disclosure, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Li et al. '551 so as to include the gas flow controller system of Li et al. '830 because this is a suitable controller system to direct gases into various regions of the processing chamber.

Claims 36 and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murugesh et al., U.S. Patent 6,228,781, as applied to claims 19-35, 37, 42-44, 46, 48, and 53-54 above, and further in view of Wing et al., U.S. Patent 6,277,235.

Murugesh et al. is applied as above but fails to expressly disclose where the process gas that is flowed through the lower region of the chamber is flown through a chuck supporting a wafer. Wing et al. discloses flowing input gas through a chuck supporting a wafer (see fig. 1 and col. 3-line 19 to col. 4-line 22). In view of this disclosure, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Murugesh et al. so as to flow input gas through the chuck as disclosed by Wing et al. because Wing et al. shows this as a suitable method to flow gas into a processing chamber.

Claims 45 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murugesh et al., U.S. Patent 6,228,781, as applied to claims 19-35, 37, 42-44, 46,

48, and 53-54 above, and further in view of Ueda et al., U.S. Patent 5,810,932 and Kadomura, U.S. Patent 6,096,160.

Murugesh et al. is applied as above but fails to expressly disclose the electromagnet and dc supply arrangement as claimed. Ueda et al. discloses a chamber 15; a coupling window 11 disposed at an upper end of the chamber; an RF antenna 12 disposed above a plane defined by the substrate; and an electromagnet arrangement 14 proximate the antenna (see Figure 7 and its description). Additionally, Kadomura discloses a magnet arrangement 53 whereby a d.c. power supply 68 is coupled to the magnets and is varied in a controlled manner (see abstract) in order to better control the plasma. In view of this disclosure, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Murugesh et al. so as to include the controller and electromagnet arrangement of Kadomura and Ueda et al. because such a control system allows for better controllability of the plasma system.

Claims 1-2, 7-11, and 13-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murugesh et al., U.S. Patent 6,228,781.

Murugesh et al. shows the invention substantially as claimed including a plasma processing system 10 comprising: a plasma processing chamber used to process a substrate 17, said processing chamber including a top region 46 located on the top surface of said plasma processing chamber and an upper peripheral region (the region around gas nozzles 38,40) located on a surface surrounding the periphery of said

plasma processing chamber; a gas flow system coupled to said plasma processing chamber (for example, 35A, 35A', 35B, 35B'), said gas flow system controlling flow of input gas into at least two different regions of said plasma processing chamber, wherein said at least two different regions include at least one peripheral region and at least one top region of said plasma processing chamber; and the peripheral region does not include any point of the top region (see figs. 1A-1D and col. 4-line 44 to col. 8-line 10).

Murugesh et al. fails to expressly disclose a cylindrical processing chamber. However, regarding the shape of the chamber, such configuration is a matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular configuration of the claimed coil is significant, see *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

Concerning the input gas being a source gas suitable for use to etch said substrate in said plasma processing chamber, since an apparatus is being claimed as the instant invention, the method teachings are not considered to be the matter at hand, since a variety of methods can be done with the apparatus. Furthermore, the particular use for the source gas is viewed as an intended use that does not further limit, and therefore does not patentably distinguish the claimed invention. The apparatus of Murugesh et al. is capable of having a source gas that is suitable for etching the substrate in the plasma processing chamber.

Additionally, concerning claims 10-11, note that the upper peripheral region of Murugesh et al. contains gas rings 37.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Murugesh et al., U.S. Patent 6,228,781, as applied to claims 1-2, 7-11, and 13-18 above, and further in view of Wing et al., U.S. Patent 6,277,235.

Murugesh et al. is applied as above but fails to expressly disclose where the process gas that is flowed through the lower region of the chamber is flown through a chuck supporting a wafer. Wing et al. discloses flowing input gas through a chuck supporting a wafer (see fig. 1 and col. 3-line 19 to col. 4-line 22). In view of this disclosure, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Murugesh et al. so as to flow input gas through the chuck as disclosed by Wing et al. because Wing et al. shows this as a suitable method to flow gas into a processing chamber.

Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Murugesh et al., U.S. Patent 6,228,781, as applied to claims 1-2, 7-11, and 13-18 above, and further in view of Li et al., U.S. Patent 6,009,830.

Murugesh et al. is applied as above but fails to expressly disclose the controller structure as claimed. Li et al. shows a gas flow system for distributing gases within a plasma process chamber 8 suitable for processing a substrate, the gas flow system comprising: a gas source (64,66) capable of supplying an input gas; a plurality of outputs (38,40) for releasing an output gas formed by a mixture of gases into said plasma process chamber, a first output 38 being configured to release said output gas into an inner region of said plasma process chamber; a second output 40 being

configured to release said output gas into an outer region of said process chamber, said inner region corresponding to a center of said substrate and said outer region corresponding to an outer portion of the substrate; and a gas flow controller (76,68,72,70,74,56,60,62,52) disposed between said gas source (64,66) and said plurality of outputs (38,40), said gas flow controller being configured to control the delivery of said output gas into said plasma process chamber, said gas flow controller having an inlet arranged to receive said input gas from said gas source, and a plurality of outlets arranged to deliver said output gas to different locations within said plasma process chamber, a first outlet being configured to deliver said output gas to said first output, a second outlet being configured to deliver said output gas to said second output, said gas flow controller adjusting the amount of said output gas that is delivered to said first and second outputs so as to provide better process control (see fig. 2 and col. 3-line 4 to col. 4-line 24). In view of this disclosure, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Murugesh et al. so as to include the gas flow controller system of Li et al. because this is a suitable controller system to direct gases into various regions of the processing chamber.

Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Collins et al., U.S. Patent 6,024,826 in view of Wing et al., U.S. Patent 6,277,235.

Collins et al. is applied as above but fails to expressly disclose where the process gas that is flowed through the lower region of the chamber is flown through a chuck

supporting a wafer. Wing et al. discloses flowing input gas through a chuck supporting a wafer (see fig. 1 and col. 3-line 19 to col. 4-line 22). In view of this disclosure, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Collins et al. so as to flow input gas through the chuck as disclosed by Wing et al. because Wing et al. shows this as a suitable method to flow gas into a processing chamber.

Claim 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over Collins et al., U.S. Patent 6,024,826 in view of Ueda et al., U.S. Patent 5,810,932 and Kadomura, U.S. Patent 6,096,160.

Collins et al. is applied as above but fails to expressly disclose the electromagnet and dc supply arrangement as claimed. Ueda et al. discloses a chamber 15; a coupling window 11 disposed at an upper end of the chamber; an RF antenna 12 disposed above a plane defined by the substrate; and an electromagnet arrangement 14 proximate the antenna (see Figure 7 and its description). Additionally, Kadomura discloses a magnet arrangement 53 whereby a d.c. power supply 68 is coupled to the magnets and is varied in a controlled manner (see abstract) in order to better control the plasma. In view of this disclosure, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Collins et al. so as to include the controller and electromagnet arrangement of Kadomura and Ueda et al. because such a control system allows for better controllability of the plasma system.

***Double Patenting***

Applicant is advised that should claims 21 and 22 be found allowable, claims 21 and 22 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

***Response to Arguments***

Applicant's arguments filed 3/10/03 have been fully considered but they are not persuasive. Applicant argues that Li et al. '551 fails to show at least a portion of said input gas being delivered to said plasma processing chamber via said first and second outlets. However, as broadly claimed, Li et al. '551 does read on the claim since applicant has not associated the first and second outlets with a particular region of the chamber. Therefore, the outlets could be represented, for instance, by the series of nozzles 34a. For this reason, the rejection is sustained. Similarly, Murugesh et al. clearly discloses gas inlets arranging from the gas sources that branch out and eventually emit gas into different regions of the processing chamber (see fig. 1a).

Concerning the rejections of claims 19-37, these rejections are moot in view of applicant's substantial amendments to these claims and the corresponding new grounds of rejection.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luz L. Alejandro whose telephone number is 703-305-4545. The examiner can normally be reached on Monday to Thursday from 7:30 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory L. Mills can be reached on 703-308-1633. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Luz L. Alejandro  
Primary Examiner  
Art Unit 1763

September 22, 2003